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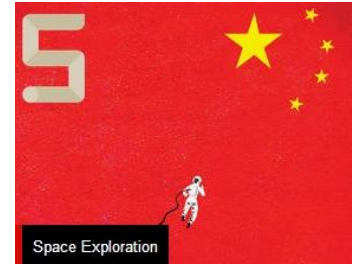
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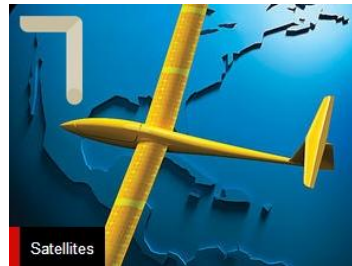
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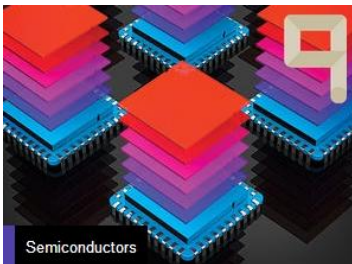
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A black graduation cap with a red tassel and a rolled-up diploma tied with a red ribbon.

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A. 매시간마다 영어 피티를 해야하고 자료 조사를 해야하기 때문에 영어가 굉장히 중요하고 그리고 교수님들도 책 같은 것을 추천해줄 때 영어로 읽으라 그리고 영어를 중시하라고 얘기를 하는 편 이에요

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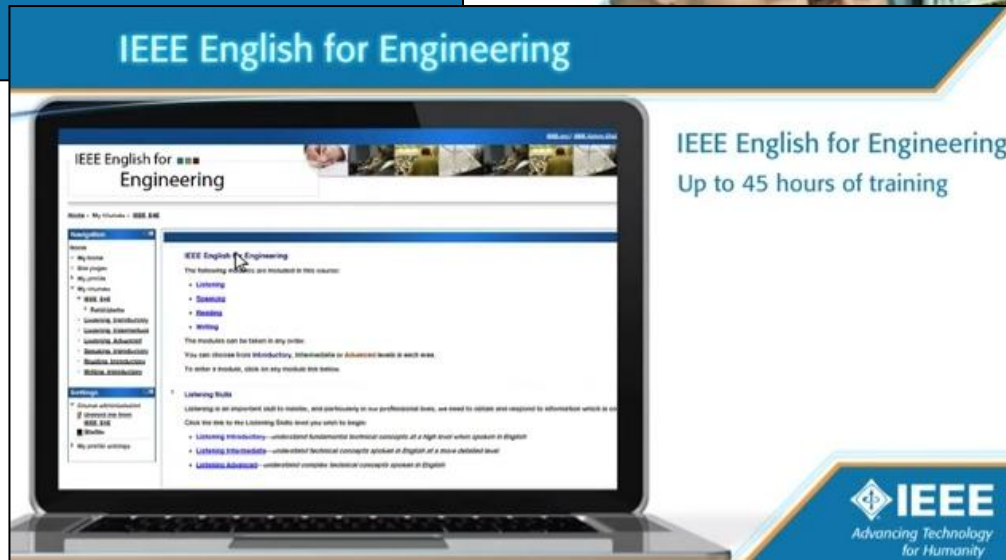
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Electronic Identities Need Private Credentials

Jan Camenisch, Anja Lehmann, and Gregory Neven | IBM Research - Zurich

Secure, trustworthy transactions over the Internet require that the communication be encrypted and that the communicating parties authenticate each other. For Web browser transactions, the TLS (Transport Layer Security) protocol routinely and adequately performs encryption and server authentication. The predominant form of user authentication, however, remains usernames and passwords. When creating accounts, users often additionally provide a list of self-declared attributes such as name, address, or birth date. Only a few attributes such as email address and credit card information have some (external) mechanism to check their authenticity.

We point out in this article, present considerable security and privacy concerns. Briefly, either the issuer learns the details of user transactions and unnecessarily exposes the issuance to online attacks, or the relying party learns more attributes than necessary, thereby becoming an attractive target for hackers. Private credentials are a superior solution offering the best of both worlds. Issuers don't have to be involved during authentication. Users disclose only those attributes required by the relying party and can do so without being tracked across their transactions.

User-Centric Identity Management

identities, possibly even multiple identities with each party be or the interests with. To verify the authenticity of a user's attributes, a party

Scene Reconstruction and Visualization From Community Photo Collections

Recent progress is described in digitizing and visualizing the world from data captured by people taking photos and uploading them to the web.

By NOAH SNAVELY, Member IEEE, IAN SIMON, MICHAEL GOESLE, Member IEEE, RICHARD SZELISKI, Fellow IEEE, and STEVEN M. SEITZ, Senior Member IEEE

ABSTRACT There are billions of photographs on the Internet, and nearly comprehensive coverage of the world is in place on Earth. Unfortunately, these large, diverse sets of images are difficult to use for visualization of our world. Over the past few years, we have made it possible to visualize the world from these large, diverse sets of images by recovering a global distribution of photos, and paths through the scene, and paths through the scene, and paths through the scene.

KEYWORDS Internet photo collections; multiview stereo; scene summarization; structure from motion; 3-D navigation and visualization; 3-D reconstruction

1. INTRODUCTION

The Internet has become a vast, ever-growing repository of visual information about our world. Virtually all of the world's famous landmarks and cities (and many not-so-famous ones) have been photographed many different times, both from the ground and from the air. Billions of these photos can be found on mapping sites such as Google Maps [23] and Microsoft's Bing Maps [76], and on public photo-sharing websites such as Flickr [19] and Photobucket [58]. For instance, a Flickr search for "Trafalgar Square" results in nearly 150 000 photos (as of June 2010), showing the square from almost every conceivable viewing position and angle, different times of day and night, changes in season, weather, and decade, and during different events. Moreover, these photos do not exist in isolation, but are surrounded by rich context, such as textual tags describing the contents of photos, metadata including who took the photo and when it was taken, and Wikipedia articles [75]. There is also a wealth of information represented in the behavior of large numbers of photographers. For example, given all the world's photos of Trafalgar Square, we could potentially identify the most-photographed objects in the scene and find the most common paths taken by tourists.

In short, these community photo collections and their

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Multimedia in Forensics, Security, and Intelligence

Face Matching and Retrieval in Forensics Applications

Anil K. Jain, Brendan Klare, and Unsang Park | Michigan State University

This article surveys forensic face-recognition approaches and the challenges they face in improving matching and retrieval results as well as processing low-quality images.

A latent fingerprint on the counter. A drop of blood on the floor. Law enforcement has successfully used these forensic clues to catch criminals for decades. But consider a face image captured by a surveillance camera that needs to be matched against millions of mug shots across the country. With the rapid increase in the number of surveillance cameras and mobile devices with built-in cameras, the forensics world is changing, and the progress in face recognition is helping to lead the way. In fact, in 2009, an estimated 30 million surveillance cameras were deployed in the US, shooting 4 billion hours of footage a week.¹ However, although recent research advances have helped lay the foundations for realizing face-matching scenarios for utilizing this data, face recognition in the forensics arena still poses a number of challenges.

This article highlights the challenges in applying face-recognition technology to forensics applications. We explain why forensic face-recognition differs from typical portrait face recognition and why a human examiner is often needed to carefully interpret and verify the matching results. Furthermore, we address three specific research problems that pose challenges to commercial-off-the-shelf (COTS) face-recognition systems (FRS):

- robustness to facial aging,

- matching forensic (composite) sketches to face photograph databases.

Solutions to these problems are necessary to accurately remove duplicates in various government face databases, including mug shot, passport, and driver's license photos (aging-invariant FRS); to search a large face database when only partial or low-quality face images are available (scar and mark matching); and to apprehend criminals when no photo of the suspect is available (sketch-to-photo matching). Additionally, we discuss methods that can augment existing COTS face-recognition systems by improving the quality of a face image prior to submission.

Face Recognition Overview

Face recognition is the task of recognizing a person using digital face images. A FRS is typically designed to output a measure of similarity between two face images. Automated FRS typically involve finding key facial landmarks (such as the center of the eyes) for alignment, normalizing the face's appearance, choosing a suitable feature representation, learning discriminative feature combinations, and developing accurate and scalable matching schemes.² Figure 1 illustrates the major steps in automatic face recognition.

Two decades of vigorous research has yielded face-recognition systems that are highly accurate in constrained environments (see Figure 2). However, the face-recognition community has recognized four key factors that significantly compromise recognition accuracy: pose, illumination, expression, and aging (see Figure 3).

Figure 4 shows the impact of facial aging on face-recognition performance. Thus, deployments of fully automated FRS are mostly limited to scenarios in which we can largely constrain these factors. Face images in government-issued identification documents (such as driver's licenses and passports) and mug shots are two scenarios that offer such constraints, which has led to success in the *deidentification* that is, a 1:1 matching process to detect ID cards enrolled under different names but belonging to the same subject of identification cards and prevention of false prisoner releases.

Paradigm for Forensic Face Recognition

Electronic Identity Cards for User Authentication—Promise and Practice

Andreas Poller, Ulrich Waldmann, Sven Vowé, and Sven Tümpke | Fraunhofer Institute for Secure Information Technology

Electronic identity (eID) cards promise to supply a nationwide user authentication mechanism. The core technology seems ready for mass deployment, but application issues might hamper eID adoption.

Long before the Internet became a commodity, many governments had public authentication schemes in place, distributing identity cards to citizens. Governments trust their cards, and so do businesses that require reliable authentication of persons. Even in countries without national ID card schemes, similar documents, such as driver's licenses, serve the same purpose.

Will government-issued electronic identity (eID) documents achieve the same success? Many European governments think so and have deployed eID schemes. The most recent and apparently most advanced eID deployment is the German eID card near *Personalausweis*. Advertised as citizens' "most important card," it promises a universal, secure authentication scheme for government and private-sector applications. Besides the obvious question of how useful national schemes can be on the Internet, will such eID schemes improve on traditional authentication methods?

- The mandatory eID as function, reserved for government use, stores a digital representation of the cardholder's identity similar to electronic passports.
- The eID function for general applications stores an identity record that authorized services can access with cardholder permission. Citizens choose whether they want this function activated.
- The optional eID function lets cardholders store a single private key and certificate for qualified electronic signatures. Private-sector trust centers issue the certificates.

Separate PINs protect the eID and eID functions. Table 1 gives an overview of the functions and data records. Here, we focus on the eID function, which public- and private-sector services can use online.

Applications for eID

An Authentication Scheme

On 1 November 2010, the German government is distributing a contactless smart card with three distinct electronic functions: a protected dataset:

January/February 2011

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FUTURE MOBILE COMMUNICATION NETWORKS



Challenges in the Design and Operation

Patrick Marsch, Bernhard Raaf, Agnieszka Szufarska, Preben Mogensen, Hao Guan, Michael Färber, Simone Redana, Klaus Pedersen, and Troels Kolding

In the past 20 years, mobile communications have evolved to the point where affordable broadband connectivity is widely available and plays a central role in today's information society. As mobile data rates are predicted to double annually in the next decade while the average revenue per user is likely to remain stagnant, the mobile communications industry is required to generate continuous innovation

regarding extremely cost-efficient still ubiquitous wireless broadband access. In addition, new application fields, such as machine-to-machine (M2M) communications and cloud computing, will introduce novel and diverse requirements that have to be met. Potential technology options to address these aspects are advanced signal processing techniques, innovative spectrum usage concepts, and possibly a more flexible air interface numerology, encompassing the usage of more spectrum and significantly more and heterogeneous

Forensic-Sketch Recognition



eID Function



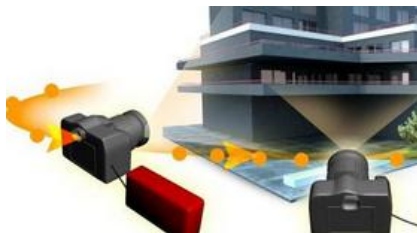
Photosynth



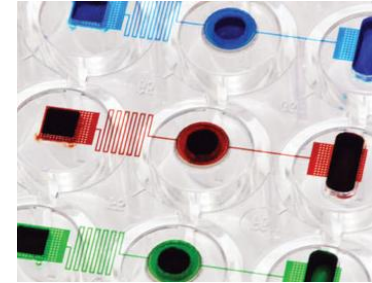
Incandescent lamp



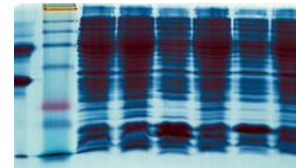
Multiview Stereo Reconstruction



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BioMEMS



Brain Signals



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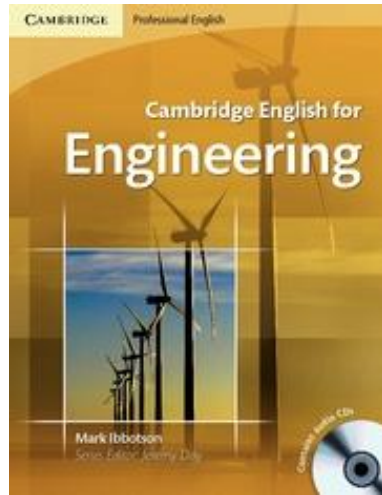
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- **Communication Skill의 향상**은 많은 상황에 도움
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UNIT 10 Pushing the boundaries

- Discussing performance and suitability
- Describing physical forces
- Discussing relative performance
- Describing capabilities and limitations

Discussing performance and suitability

1 a In pairs, answer the following questions about wind turbines.

- What function do wind turbines perform?
- What are the main advantages and disadvantages of wind turbines?
- What types of location are most suitable for them?

b In pairs, discuss the functions and technical characteristics of the following wind turbine components.

blades tower generator

2 a ▶▶ Mike, Loreta and Hanif, engineers at a wind turbine constructor, are discussing performance and suitability issues relating to offshore wind turbines. Listen to the conversation and answer the following questions.

- Which wind turbine component do the engineers discuss?
- What is the big problem with offshore installations?
- Which two types of construction material are being compared?
- Why are coastal defences mentioned?
- What point does Hanif make about regular maintenance?
- What comparison needs to be made with regard to steel?

b Match the words (1-6) from the discussion to the definitions (a-f).

1. appropriate/suitable	a. the right solution for a particular situation
2. consistent/suitable	b. good enough for the intended function
3. cost-effective/economical	c. performs a function well
4. effective	d. works quickly and well
5. efficient	e. makes the most of resources, isn't wasteful
6. sufficient/adequate	f. doesn't break down, always performs in the same way

c Make the following words negative by adding the prefixes in- or un-.

1. adequate	6. efficient
2. appropriate	7. reliable
3. consistent	8. sufficient
4. economical	9. suitable
5. effective	

Describing physical forces

4 a Read the following article. What is a solar tower and how does it use the forces of expansion and pressure?

SOLAR TOWERS

The dawn of a new era in renewable energy?

The need to develop renewable energy is widely seen as a futuristic technological challenge. In reality, some of the most effective ways of harnessing horsepower from nature are based on concepts that have existed for donkey's years. The wind turbine is an obvious example. Another – less well known, but conceived almost a century ago – is the solar tower or solar chimney. And if the Australian company EnviroMission completes an ambitious solar tower project in the New South Wales desert, the technology could capture not just the sun's rays but the public's imagination worldwide. The firm is planning to construct a tower a colossal one kilometre high. If built, it will be the world's tallest structure by a huge margin.

How it works

A large glass enclosure is built, with a chimney at its centre. The sun heats the enclosure, causing expansion of the air inside. At the top of the chimney, the lower temperature and lower pressure due to the higher altitude create a pressure differential known as stack effect. This causes air to flow up the chimney. Electricity is generated by turbines at the bottom of the chimney, which are driven by the flow of air. The larger the area of glass and the taller the chimney, the greater the airflow and the higher the generating capacity.

b What physical forces would act on a solar tower 1 km high?

c ▶▶ Li Su, a structural engineer specialising in the design of very tall structures, is giving a talk to a group of engineering students. Listen to the talk. Which of the forces in the box doesn't she mention?

bending centrifugal force compression contraction expansion
friction pressure shear tension torsion/torque

d Label the diagrams using the forces in Exercise 4c.

Wind Turbines - FACT FILE

- The fact that wind turbines consume no fuel and waste very little energy is clearly a fundamental advantage. But just how efficient are they? As a result
- Clearly, wind turbines need to be located on relatively windy sites in order to function. From a meteorological standpoint, what kinds of geographical locations are the most suitable?
- Turbines are generally placed at the tops of tall towers, where wind speeds are higher, thus making them more effective. What other geographical factors influence performance?
- Wind turbines rarely function continuously, due to the fact that wind speeds are variable. How significant is the impact of variable weather conditions on power generating capacity?
- Transmitting electricity over long distances is inherently inefficient, due to power loss from overhead or underground power lines. Find out more about the advantages of generating power locally.
- The generating capacity of wind turbines is generally low for it to be relied upon 100%. What percentage of total generating capacity can wind turbines realistically provide?
- Some early wind turbines were prone to suffering breakdowns caused by metal stresses stemming from higher wind loads on the upper blade. However, this problem has been overcome on modern units. Learn more about the technical evolution of wind turbines.

b You are engineers at Sigma Power. The marketing manager has asked you to provide some technical answers for the frequently asked questions section of the company's website. The FAQ section is aimed primarily at potential clients who are thinking of installing wind turbines at their sites – factories, office complexes, hospitals, and university campuses. In pairs, discuss the following questions and write the answers for the website using the information in the fact file and your own knowledge.

Frequently Asked Questions
A common sense introduction to wind turbines

- What's the big advantage of having a wind turbine at my site?
- How dependable are wind turbines as a source of power, given that weather conditions are changeable?
- What kinds of site are most suitable for wind turbines, relative to natural factors such as hills, the coast, and height above sea level?
- What's the most appropriate location for my wind turbine, relative to local features on the site, such as trees and buildings?

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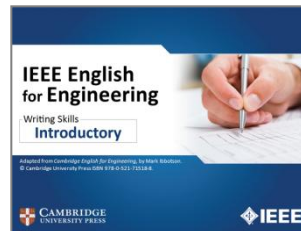
Component of IEEE English for Engineering

- Listening
- Speaking
- Reading
- Writing



Skill level of IEEE English for Engineering

- Intermediate
- Introductory
- Advanced



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- 45시간 이상의 **Online learning contents**

1 **Listening Skills**

Listening is an important skill to master, and particularly in our professional lives, we need to obtain and respond to information which is communicated to us this way.

Click the link to the Listening Skills level you wish to begin:

- [Listening Introductory](#)--understand basic technical concepts at a high level using basic technical vocabulary in English
- [Listening Intermediate](#)--understand technical concepts using an expanded vocabulary of technical terms in English
- [Listening Advanced](#)--understand complex technical concepts using a large vocabulary of technical terms in English

2 **Speaking Skills**

Communicating requires speaking skills that encourage people to listen, engage, and consider the information you are sharing with a view to doing something with it. Strong speaking skills will help you participate in business meetings and conferences, talk to colleagues, and communicate with people around the world.

Click the link to the Speaking Skills level you wish to begin:

- [Speaking Introductory](#)--talk about fundamental technical concepts at a high level using basic technical vocabulary in English
- [Speaking Intermediate](#)--talk about technical concepts using an expanded vocabulary of technical terms in English
- [Speaking Advanced](#)--talk about complex technical concepts using a large vocabulary of technical terms in English

3 **Reading Skills**

Reading is a fundamental skill to possess the basic skill to understand technical information.

Click the link to the Reading Skills level you wish to begin:

- [Reading Introductory](#)--understand basic technical concepts at a high level using basic technical vocabulary in English
- [Reading Intermediate](#)--understand technical concepts using an expanded vocabulary of technical terms in English
- [Reading Advanced](#)--understand complex technical concepts using a large vocabulary of technical terms in English

4 **Writing Skills**

Writing skills are essential for achieving career and business goals.

Click the link to the Writing Skills level you wish to begin:

- [Writing Introductory](#)--use fundamental vocabulary terms to describe technical concepts at a high level in English
- [Writing Intermediate](#)--use expanded vocabulary of technical terms with little use of the aid of glossary definitions and to describe technical concepts at a more detailed level in English
- [Writing Advanced](#)--use a large vocabulary of technical terms and to describe complex technical concepts at a detailed level in English



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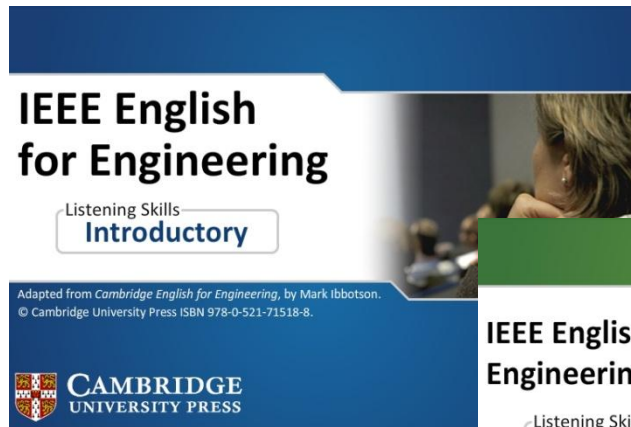
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- 학습 Level 선택 가능(Intermediate, Introductory, Advanced)



- 역동적이고 상호적인 교육 실현

The collage displays several key features of the IEEE English for Engineering software:

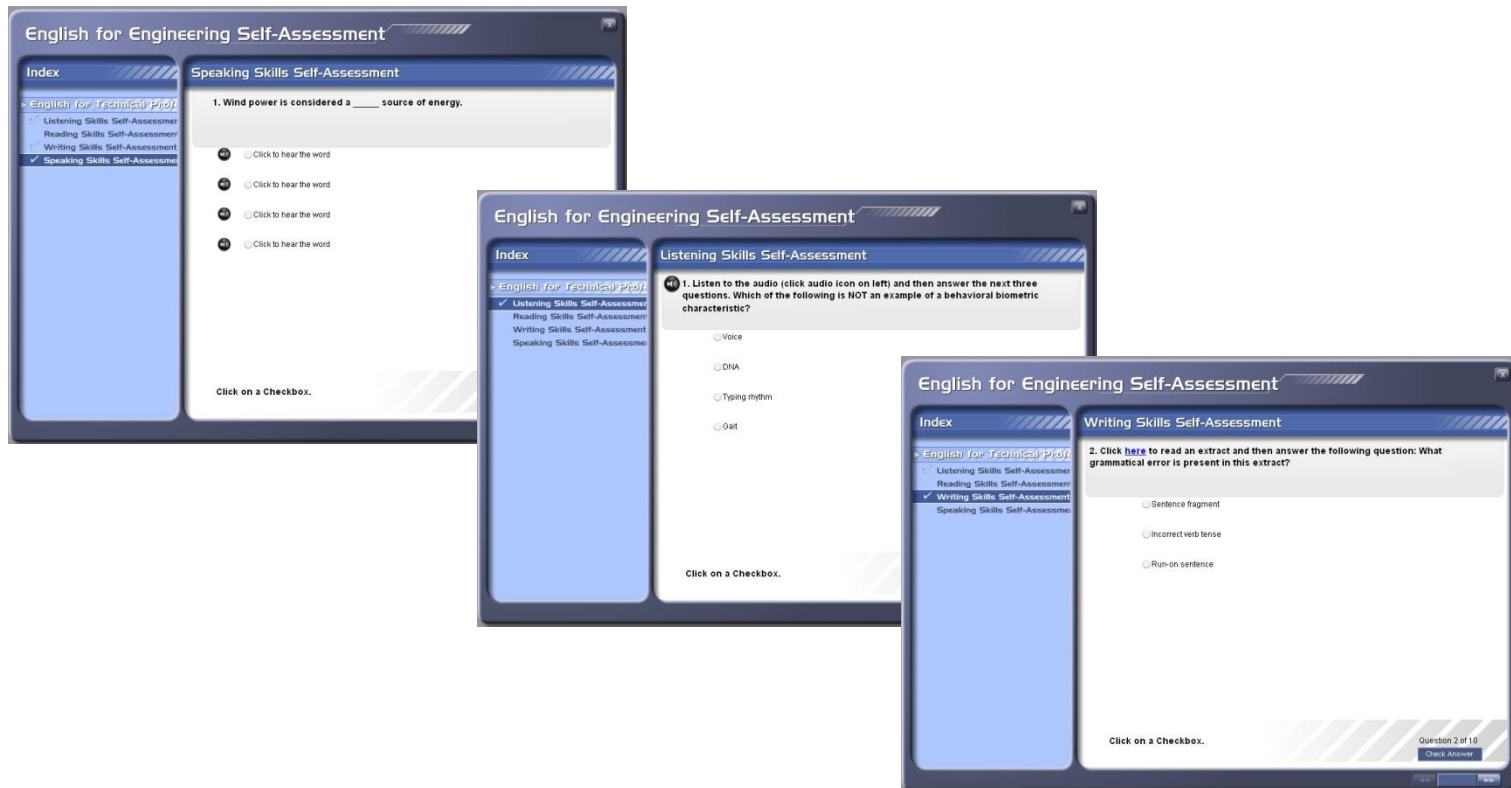
- Reading Technical Materials:** A module for matching GPS applications with descriptions, including a 'Read' button and a list of applications like topographical surveying, maritime applications, and civil engineering.
- Describing Types of Technical Problems:** A listening activity where users listen to a conversation and select whether statements are True or False. It includes a progress bar and a 'Sorry, that is incorrect' message.
- Listening to Conversations:** A module featuring a video of two people talking, with a 'Listen to Conversations' button and a 'Submit' button.
- Introductory Quiz:** A quiz section with multiple-choice questions, such as 'The Global Positioning System was developed in 1973 for the military to increase... and improve accuracy.'
- Discussing Performance and Suitability:** A module for making words negative by adding prefixes, with a 'Great Job!' message and a 'button to proceed'.
- Technical Criteria:** A section for evaluating technical specifications, showing a table with criteria like Maximum speed, Train length, Aerodynamic drag, Diameter of wheels, and Motor power output.

- Course 이수 시 IEEE에서 제공하는 **인증서 제공**

(각 Course 학습 완료 후 포함되어 있는 Quiz의 70% 이상 획득 시)



- User에 대한 **Level 선택**을 할 수 있는 **Placement exam 제공**



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-Lecturer,
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"Having a large number of international students in our college of engineering, they appreciate the opportunity IEEE English for Engineering offers to improve English skills, especially in listening and writing."

우리 공학 대학에는 많은 수의 외국인 학생들이 있는데 그들은 IEEE English for Engineering의 Listening과 Writing 분야에 대한 영어 기량을 증진 시킬 수 있도록 한다.



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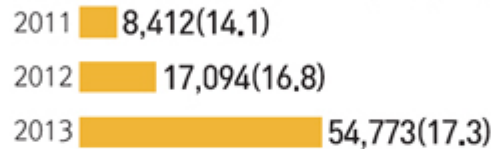
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전자책 출간종수 추이 (단위:권, %) 자료:인터파크도서



※인터파크 기준, 2013년은 추정치, ()은 종이·전자책 동시출간비율

[전자책](#) 보급이 빠르게 늘어나고 있다. 올해 전자책 출간 종수가 2년전에 비해 6.5배나 증가했다. 특히 종이책과 전자책의 동시출간이 좋은 성과를 내며 확산에 가속도를 붙이고 있다. 이에따라 전자책 유통업체들도 다양한 마케팅으로 전자책 시장 띄우기에 적극 나서고 있다.

3일 [온라인서점](#) 인터파크도서에 따르면, 올해 전자책 출간 종수는 전자책이 본격적으로 국내 [서비스](#)되던 해인 2011년 대비 6.5배 늘어났다. 또 매년 전자책 출간 종수가 전년 대비 2~3배 꾸준히 증가하고, 종이책이 전자책으로 출간되는 비중도 꾸준히 늘고 있다.

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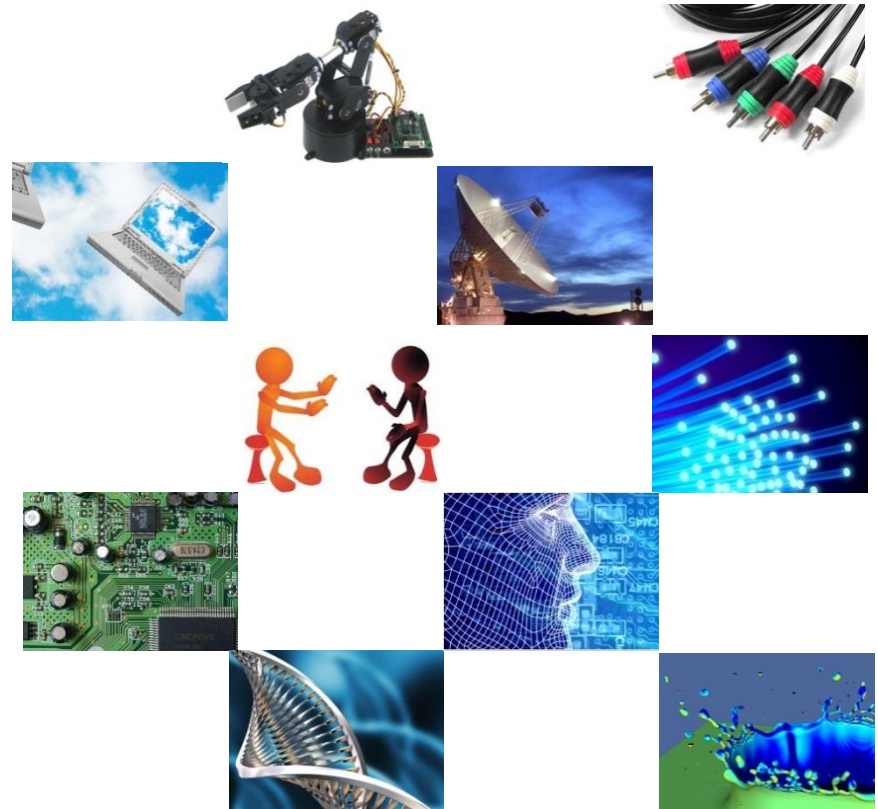
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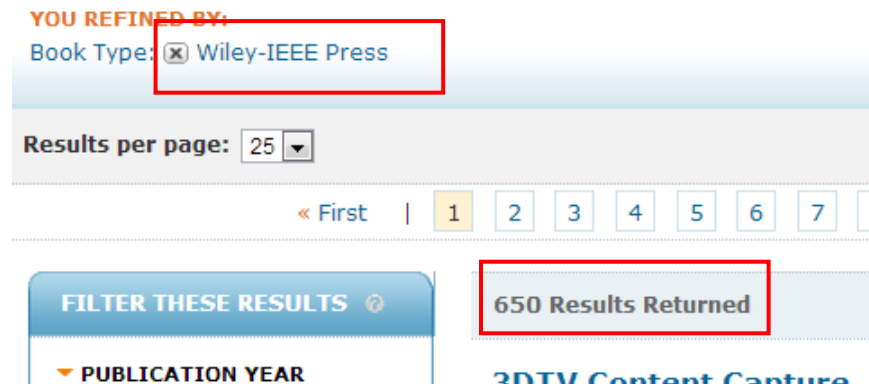
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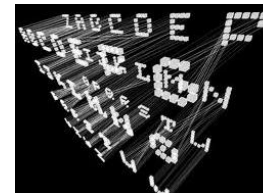
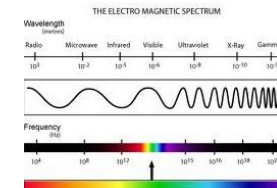
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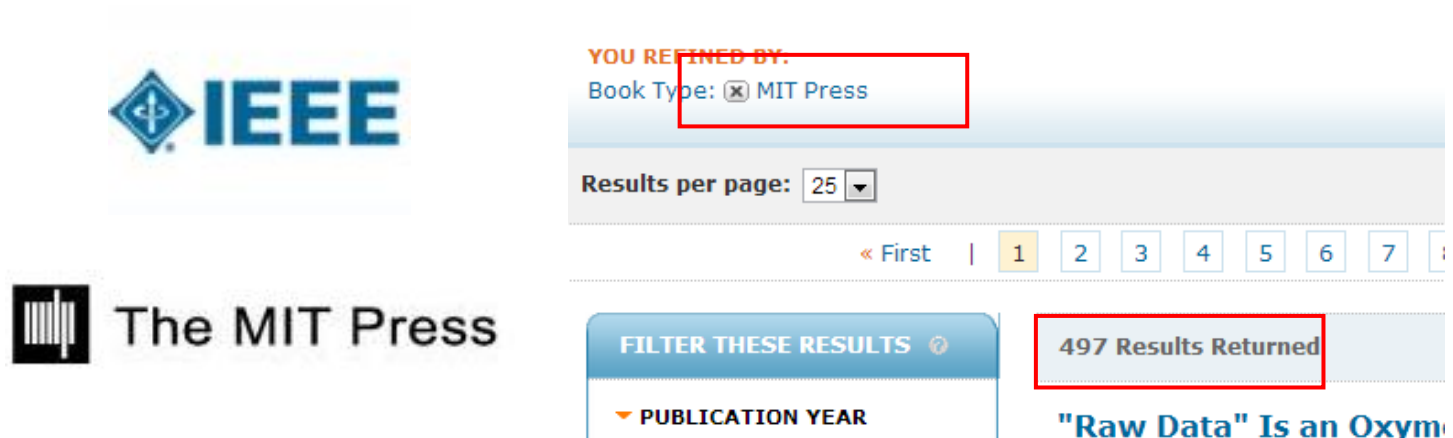
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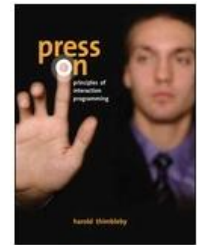
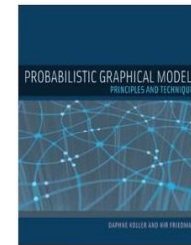
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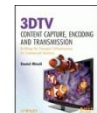
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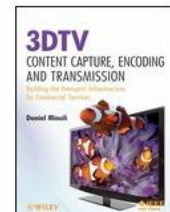
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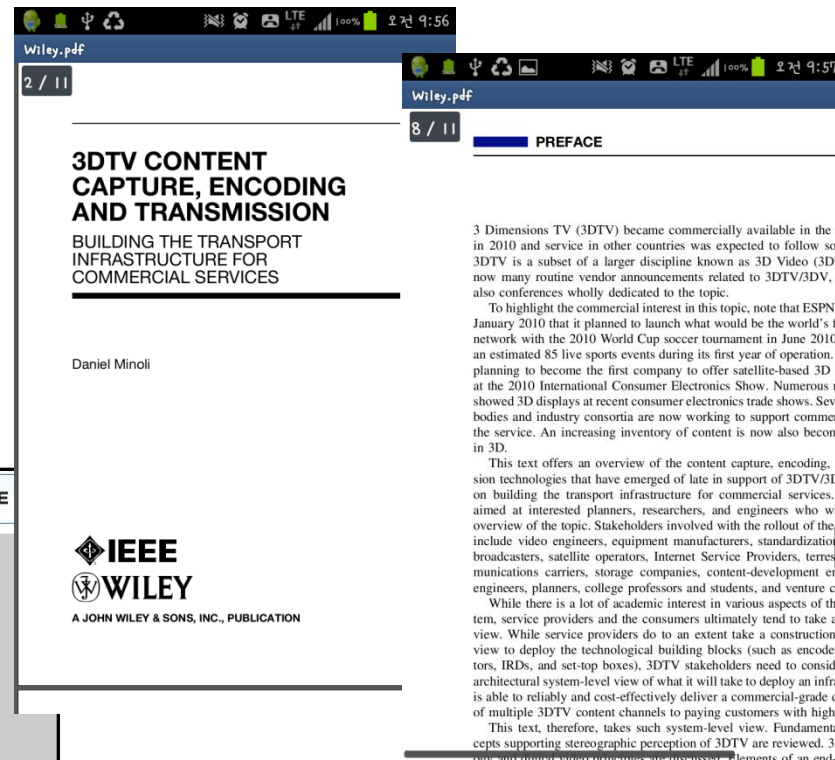
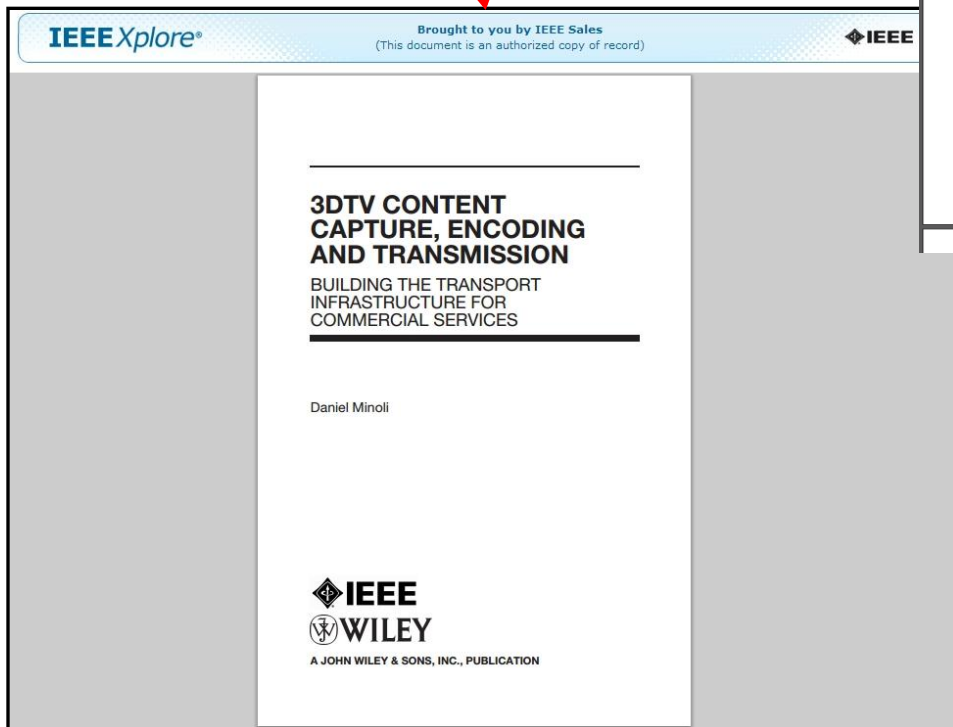
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